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February 6, 2013

OPP Docket, Environmental Protection Agency
Mailcode 2822IT
1200 Pennsylvania Ave, NW
Washington, DC 20460
RE: Docket ID No. EPA-HQ-OPP-2010-0889

To whom it may concern,

This letter is written in order to provide my comments regarding the registration petition submitted to your Agency for the new insecticide active ingredient sulfoxaflor by Dow Agrosciences, LLC. I am an Extension Specialist and Entomologist in the Agricultural Experiment Station in the Dept. of Entomology, Univ. of California-Davis having held this position since 1991. My research and extension program strives to develop and refine IPM programs for key arthropod pests of field and vegetable crops. I have researched the utility and fit of sulfoxaflor in the California cotton IPM system for the last 4 years. These studies involved quantifying the efficacy of this active ingredient against key cotton insect pests western tarnished plant bug and cotton aphids, the impacts on populations of natural enemies in cotton, the potential of sulfoxaflor to impact (flare) populations of secondary pests (spider mites), and the role of this product in protecting cotton yield and quality.

Sulfoxaflor, based on my research, appears to be uniquely situated to contribute positively to integrated pest management programs of cotton in California. The pest spectrum of sulfoxaflor, western tarnished plant bugs (*Lygus hesperus*) and cotton aphids (*Aphis gossypii*), represent two of the most damaging and economically-concerning pests of cotton. Based on annual estimates of cotton crop losses made by cotton entomologists in California (as well as in other states), *L. hesperus* generally causes the greatest yield loss among arthropod pests of cotton in California. Depending on the year, up to a 5% loss is recorded in spite of the use of recommended management practices. This pest infests numerous crops in the San Joaquin Valley (SJV) and flourishes in the intensive agriculture of this production area. IPM specialists have developed a well-balanced program for managing *L. hesperus* in cotton utilizing cultural controls, biological controls, a vigorously-growing/well-managed cotton crop, but insecticides are still needed to prevent economic losses in the cotton crop. The dynamic nature of this pest and intricacies of this production system mean that non-chemical methods alone are not sufficient. During my 20-year career, cotton growers have relied on carbamate, organophosphate, and pyrethroid insecticides for lygus management. The former two classes of chemistry have largely been removed from the "toolbox" due to insecticide resistance in *L. hesperus* and regulatory actions with the loss of aldicarb (Temik®) being the most recent action. Pyrethroid insecticides have been used for the last ~15 years and were the standard insecticide treatment for lygus in the SJV. This class of chemistry "stressed" the IPM programs due to their

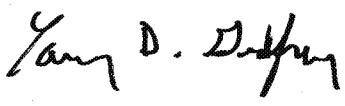
broad-spectrum nature and propensity to kill natural enemies which promoted populations of cotton aphids (therefore creating a secondary pest and additional insecticide applications). Insecticide resistance is presently developing to lygus bugs in the San Joaquin Valley to pyrethroid insecticides and growers are in need of alternative insecticidal approaches. Flonicamid was registered ~5 years ago and is presently very effective against lygus bugs in cotton and heavily used by cotton growers. Resistance to this active ingredient has not yet been detected but having insecticide rotational partners such as sulfoxaflor is the optimal scenario in order to provide sustainable IPM programs, i.e., protect all available effective chemistry from the development of resistance.

A. gossypii, the other primary target of sulfoxaflor in the SJV, while also potentially reducing lint yield, has the most potential to negatively impact cotton lint quality. During the period of open lint, feeding by aphids potentially results in honeydew deposition on the lint which reduces the quality and ability to process the lint. In the worst case scenario, a production region gains the reputation of producing "sticky cotton" and long-term ramifications on marketability of the cotton can result. Presently in the SJV, cotton aphid management relies on applications of chlorpyrifos and neonicotinoid insecticides. During the late-season period (August to harvest), my research has shown the aphid threshold for sticky cotton is very low (5 to 10 aphids per leaf), so growers pay close attention to management of this pest. Both of these insecticides are under scrutiny with chlorpyrifos use being examined due to water quality issues. In addition, aphid resistance to the neonicotinoid insecticides is widespread in Mid-South cotton and, given 15 years of use in the SJV, is likely to occur or perhaps already present at some level. Flonicamid is also highly effective against cotton aphids but this insecticide is generally "reserved" for use against lygus bugs (or has already been used during the season prior to the need for cotton aphids which generally infest ~4-6 weeks after lygus bugs).

Therefore, there is a need for a product with the attributes of sulfoxaflor for cotton IPM in the SJV. My research has shown a high level of activity against both lygus bugs and cotton aphids. The unique mode of action and new class of chemistry are definite advantages for resistance management and key for prolonging the effectiveness of other registered products. Sulfoxaflor has less impact on populations of natural enemies than the other insecticides used for lygus bug management (pyrethroids) and protecting these beneficials helps to keep other arthropod pest populations in check (late-season spider mites, beet armyworms, whiteflies, etc.). This helps to reduce treatment needs for these pests. Finally, sulfoxaflor in my research has provided excellent protection of cotton yields which will promote the profitability of cotton and its role in the agricultural economy.

I appreciate the opportunity to comment on this decision-making process and I thank you for considering this information. Please contact me if you need additional information or if you have any questions.

Sincerely,



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